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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/616,635	07/26/2000	Kevin R. Boyle	PHB 34,367	9407

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EXAMINER
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RAMPURIA, SHARAD K

ART UNIT	PAPER NUMBER
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2688

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/616,635	<b>Applicant(s)</b> BOYLE, KEVIN R.	
	<b>Examiner</b> Sharad Rampuria	<b>Art Unit</b> 2688	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

I. The current office-action is in response to the amendment filed on 10/17/05.

Accordingly, Claims 4 and 13 are cancelled and Claims 1-3, 5-12 and 14-18 are pending for further examination as follows:

***Claim Rejections - 35 USC § 103***

II. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

III. Claims 1, 5, 7, 9-10, 14, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (US 5467324) in view of Hayes et al. (US 5892483).

Regarding Claim 1, Houlihan disclosed a body-worn personal communications apparatus (Abstract, 100; Fig.1; Col.3; 1-12), comprising:

A transceiver connected to said physically-shortened electric antenna (Col.3; 41-51 and Claim 1);

A microphone (132; Fig.1) connected to said transceiver; (Col.3; 31-40) and

A casing, wherein said transceiver is disposed within said casing, (Abstract, 100; Fig.1; Col.2; 51-67, Col.3; 1-12)

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Wherein microphone (332; fig.9) is mounted on said physically-shortened electric antenna (Col.1; 67–Col.2; 5 and Col.5; 28-32)

Wherein said physically-shortened electric antenna and said microphone are mounted transversely to a plane through said casing. (236; Fig.6, Col.4; 39-44)

Houlihan fails to disclose a physically-shortened electric antenna that is physically shorter than its electrical length. However, Hayes teaches in an analogous art, that a physically-shortened electric antenna that is physically shorter than its electrical length (electrical length is greater than physical length; Col.4; 39-46 and 55-64 and Col.1; 52-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan including a physically-shortened electric antenna that is physically shorter than its electrical length in order to improve miniaturization.

Regarding Claim 5, Houlihan disclosed the apparatus of claim 1, wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing. (332; fig.9; Col.5; 28-32)

Regarding Claim 7, Houlihan (5,467,324) disclosed The apparatus of claim 5, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51)

Regarding Claim 9, Houlihan disclosed the apparatus of claim 5, wherein said microphone provides a top loading to said physically-shortened electric antenna. (332; fig.9; Col.5; 28-32)

Regarding Claim 10, Houlihan disclosed a body-worn personal communications apparatus (Abstract, 100; Fig.1; Col.3; 1-12), comprising:  
A casing; (Abstract, 100; Fig.1; Col.2; 51-67, Col.3; 1-12) and  
A physically-shortened electric mounted transversely to a plane through said casing. (236; Fig.6, Col.4; 39-44)

Houlihan fails to disclose wherein the physically-shortened electric antenna that is physically shorter than its electrical length. However, Hayes teaches in an analogous art, that wherein the physically-shortened electric antenna that is physically shorter than its electrical length (electrical length is greater than physical length; Col.4; 39-46 and 55-64 and Col.1; 52-61); Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan including wherein the physically-shortened electric antenna that is physically shorter than its electrical length in order to improve miniaturization.

Regarding Claim 14, Houlihan disclosed the apparatus of claim 10, wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing. (332; fig.9; Col.5; 28-32)

Regarding Claim 17, Houlihan (5,467,324) disclosed The apparatus of claim 10, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51)

Regarding Claim 18, Houlihan disclosed the apparatus of claim 10, wherein said microphone provides a top loading to said physically-shortened electric antenna. (332; fig.9; Col.5; 28-32)

IV. Claims 3, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan and Hayes further in view of Hirai et al.

Regarding Claim 3, the above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that the apparatus of claim 1, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including a meander-line antenna in order to minimize the space required for the antenna.

Regarding Claim 12, the above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that the apparatus of

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claim 10, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including a meander-line antenna in order to minimize the space required for the antenna.

V. Claims 2, 6, 8, 11, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan and Hayes further in view of McLean (GB 2036447).

Regarding Claim 2, Houlihan disclosed a body-worn personal communications apparatus (Abstract, 100; Fig.1; Col.3; 1-12), comprising:

A casing; (Abstract, 100; Fig.1; Col.2; 51-67, Col.3; 1-12) and

A physically-shortened electric mounted transversely to a plane through said casing. (236; Fig.6, Col.4; 39-44)

Houlihan fails to disclose wherein the physically-shortened electric antenna that is physically shorter than its electrical length. However, Hayes teaches in an analogous art, that wherein the physically-shortened electric antenna that is physically shorter than its electrical length (electrical length is greater than physical length; Col.4; 39-46 and 55-64 and Col.1; 52-61); Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan including wherein the physically-shortened electric antenna that is physically shorter than its electrical length in order to improve miniaturization.

The above combination disclosed all the particulars of the claim except wherein said physically shortened electric antenna is a helical antenna. However, McLean teaches in an

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analogous art, that the apparatus of claim 1, wherein said physically shortened electric antenna is a helical antenna. (Page.2; 1-6) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including wherein said physically - shortened electric antenna is a helical antenna in order to use the thickness of cable.

Regarding Claim 6, the above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 5, wherein said physically shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including the coaxial cable in order to use the thickness of cable.

Regarding Claim 8, the above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 6, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub. (Page.2; 45-64) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including the coaxial cable in order to use the thickness of cable.

Regarding Claim 11, the above combination disclosed all the particulars of the claim except wherein said physically shortened electric antenna is a helical antenna. However, McLean



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teaches in an analogous art, that apparatus of claim 10, wherein said physically shortened electric antenna is a helical antenna. (Page.2; 1-6) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including wherein said physically shortened electric antenna is a helical antenna in order to use the thickness of cable.

Regarding Claim 15, the above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 10, further comprising: a transceiver, wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including the coaxial cable in order to use the thickness of cable.

Regarding Claim 16, the above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 15, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Houlihan and Hayes including the coaxial cable in order to use the thickness of cable.

### **Response to Amendment**

VI. Applicant's arguments with respect to claims 1-3, 5-12 and 14-18 have been considered but are moot in view of the new ground(s) of rejection.


### ***Conclusion***

VII. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharad Rampuria whose telephone number is (571) 272-7870. The examiner can normally be reached on M-F. (9-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC@uspto.gov](mailto:EBC@uspto.gov).

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**GEORGE ENG**  
SUPERVISORY PATENT EXAMINER